#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau





## (43) International Publication Date 26 September 2002 (26.09.2002)

### **PCT**

# (10) International Publication Number WO 02/074210 A3

(51) International Patent Classification<sup>7</sup>: G02C 7/04, 7/10

A61F 2/16,

(21) International Application Number: PCT/US02/02712

(22) International Filing Date: 29 January 2002 (29.01.2002)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 09/809,152

15 March 2001 (15.03.2001) US

- (71) Applicant and
- (72) Inventor: PORTNEY, Valdemar [US/US]; 11940 North Rivera, Tustin, CA 92782 (US).
- (74) Agent: HACKLER, Walter, A.; 2372 South East Bristol, Suite B, Newport Beach, CA 92660-0755 (US).

- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

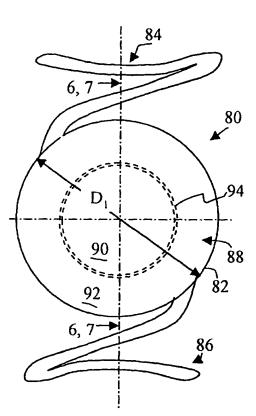
#### Published:

with international search report

(88) Date of publication of the international search report: 9 January 2003

[Continued on next page]

(54) Title: NARROW PROFILE INTRAOCULAR LENS



(57) Abstract: A narrow profile, glare reducing, refractive monofocal intraocular lens (80) is described that comprises an optic (82) having an anterior surface and a posterior surface and an optical axis. One of the anterior and posterior surfaces is formed having two adjacent peri-axial, stepped imaging zones (90), (92), the two imaging zones having the substantially the same optical power that is preferably outside the -5 to +5 diopter range. A transition zone (94) between the two imaging zones preferably has a continuously variable surface curvature that reduces both indirect glare (caused by light refraction) and direct glare (caused by light diffraction) in an individual's eye in which the intraocular lens (80) in implanted. The transition zone (94) surface may alternatively be continuously curved or variably curved to reduce direct glare and indirect glare, respectively. Attachment members (84), (86) joined to the optic (82) position the intraocular lens in an eye with the optical axis of the optic (82) generally aligned with the optical axis of the eye.



WO 02/074210 A3



. I IDDAYA DAYARIN KA BIRKA BIRKA BIRKA 1 KA BIRKA BIRKA KADIR KADIR KADIR BIRKA DIRKA DAKER BIRKA BIRKA BADA

## WO 02/074210 A3

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/02712

| A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61F 02/16; G02C 07/04, 07/10  |  |  |                                    |
|---|--|--|------------------------------------|
| US CL : 623/6.17, 6.25; 351/161   |  |  |                                    |
| According to International Patent Classification (IPC) or to both national classification and IPC   |  |  |                                    |
| B. FIELDS SEARCHED  |  |  |                                    |
| Minimum documentation searched (classification system followed by classification symbols) U.S.: 623/6.17, 6.25, 6.19, 6.26, 6, 6.27, 6.28, 6.29, 6.3, 6.31; 351/161, 160, 163 |  |  |                                    |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched   |  |  |                                    |
| Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  |  |  |                                    |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT  |  |  |                                    |
| Category *  | Citation of document, with indication, where ap  |  | Relevant to claim No.              |
| Y   | US 5,120,120 A (COHEN) 9 June 1992 (09.06.199 columns 5-16.  | 92), see entire specification, especially  | 1-6, 8, 11-12, 17, 19,<br>20, 22   |
| γ   | US 5,071,207 A (CEGLIO et al) 10 December 1991 (10.12.1991), see entire 1-6, 8, 11-12, 17, 19.   |  |                                    |
|   | specification, especially columns 2-7.   |  |                                    |
| Y   | US 5,201,763 A (BRADY et al) 13 April 1993 (13.04.1993), see entire specification, 8, 17, 20 especially columns 2-7.   |  | 8, 17, 20                          |
|   | topoliting tollaring 5 7.  |  |                                    |
|   |  |  |                                    |
|   |  |  | )                                  |
|   |  |  |                                    |
|   |  |  |                                    |
|   |  |  |                                    |
|   |  |  |                                    |
| ĺ   |  |  | 1                                  |
|   |  |  |                                    |
|   |  |  | 1                                  |
|   |  |  |                                    |
|   | the second secon |  | <del></del>                        |
|   | documents are listed in the continuation of Box C.   | See patent family annex.  "T" later document published after the int             |                                    |
| date and not in cor   |  | date and not in conflict with the appli  | cation but cited to understand the |
|   | defining the general state of the art which is not considered to be<br>lar relevance   | principle or theory underlying the in-   | rention                            |
| "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step.                                  |  |  |                                    |
| "L" document which may throw doubts on priority claim(s) or which is cited to   |  | when the document is taken alone   |                                    |
| establish the publication date of another citation or other special reason (as "Y" document of  |  | "Y" document of particular relevance; the considered to involve an inventive ste |                                    |
| • •   | referring to an oral disclosure, use, exhibition or other means  | combined with one or more other suc<br>being obvious to a person skilled in d    | h documents, such combination      |
|   | •  | •  | İ                                  |
| "P" document published prior to the international filing date but later than the "&" document member of the same patent family priority date claimed                          |  |  |                                    |
| Date of the a   | ctual completion of the international search   | Date of mailing of the international se  | arch report                        |
| 20 May 2002   | 2 (20.05.2002)   | 12 AUG ?nn?  |                                    |
| Name and m  | ailing address of the ISA/US   | Authorized/officer   |                                    |
| Commissioner of Patents and Trademarks Box PCT  |  | Currine McDermon   |                                    |
| Washington, D.C. 20231  |  | X / V  |                                    |
| Facsimile No. (703)305-3230  Telephone No. (703) 308-0858   |  |  |                                    |

Form PCT/ISA/210 (second sheet) (July 1998)

THIS PAGE BLANK (USPTO)